SEQUENCE LISTING

<110> CURTISS III, Roy

<120> FUNCTIONAL BALANCED-LETHAL HOST-VECTOR SYSTEMS

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<170> PatentIn Ver. 2.0

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<211> 1735
<212> DNA
<213> Salmonella typhimurium

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<212> PRT
<213> Salmonella typhimurium

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Arg Gly Met Val Gly Ser Val Leu Met Gln Arg Met Val Glu Glu Arg
35 40 45

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Ala Phe Asp Leu Asp Ala Leu Lys Ala Leu Asp Ile Ile Val Thr Cys
                85                  90                  95

Gln Gly Gly Asp Tyr Thr Asn Glu Ile Tyr Pro Lys Leu Arg Glu Ser
            100                 105                 110

Gly Trp Gln Gly Tyr Trp Ile Asp Ala Ala Ser Thr Leu Arg Met Lys
        115                 120                 125

Asp Asp Ala Ile Ile Ile Leu Asp Pro Val Asn Gln Asp Val Ile Thr
    130                 135                 140

Asp Gly Leu Asn Asn Gly Val Lys Thr Phe Val Gly Gly Asn Cys Thr
145                 150                 155                 160

Val Ser Leu Met Leu Met Ser Leu Gly Gly Leu Phe Ala His Asn Leu
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Val Asp Trp Val Ser Val Ala Thr Tyr Gln Ala Ala Ser Gly Gly Gly
            180                 185                 190

Ala Arg His Met Arg Glu Leu Leu Thr Gln Met Gly Gln Leu Tyr Gly
        195                 200                 205

His Val Ala Asp Glu Leu Ala Thr Pro Ser Ser Ala Ile Leu Asp Ile
    210                 215                 220

Glu Arg Lys Val Thr Ala Leu Thr Arg Ser Gly Glu Leu Pro Val Asp
225                 230                 235                 240

Asn Phe Gly Val Pro Leu Ala Gly Ser Leu Ile Pro Trp Ile Asp Lys
                245                 250                 255

Gln Leu Asp Asn Gly Gln Ser Arg Glu Glu Trp Lys Gly Gln Ala Glu
            260                 265                 270

Thr Asn Lys Ile Leu Asn Thr Ala Ser Val Ile Pro Val Asp Gly Leu
        275                 280                 285

Cys Val Arg Val Gly Ala Leu Arg Cys His Ser Gln Ala Phe Thr Ile
    290                 295                 300

Lys Leu Lys Lys Glu Val Ser Ile Pro Thr Val Glu Glu Leu Leu Ala
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Ala His Asn Pro Trp Ala Lys Val Val Pro Asn Asp Arg Asp Ile Thr
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Met Arg Glu Leu Thr Pro Ala Ala Val Thr Gly Thr Leu Thr Thr Pro
            340                 345                 350

Val Gly Arg Leu Arg Lys Leu Asn Met Gly Pro Glu Phe Leu Ser Ala
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<211> 1961
<212> DNA
<213> Salmonella typhimurium and Pseudomonas putida

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<213> Salmonella typhimurium and Pseudomonas putida

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Arg Gly Met Val Gly Ser Val Leu Met Gln Arg Met Val Glu Glu Arg
35 40 45

Asp Phe Asp Ala Ile Arg Pro Val Phe Phe Ser Thr Ser Gln Phe Gly
50 55 60

Gln Ala Ala Pro Thr Phe Gly Asp Thr Ser Thr Gly Thr Leu Gln Asp
65 70 75 80

Ala Phe Asp Leu Asp Ala Leu Lys Ala Leu Asp Met Asn Lys Gly Val
85 90 95

Met Arg Pro Gly His Val Gln Leu Arg Val Leu Asp Met Ser Lys Ala
100 105 110

Leu Glu His Tyr Val Glu Leu Leu Gly Leu Ile Glu Met Asp Arg Asp
115 120 125

Asp Gln Gly Arg Val Tyr Leu Lys Ala Trp Thr Glu Val Asp Lys Phe
130 135 140

Ser Leu Val Leu Arg Glu Ala Asp Glu Pro Gly Met Asp Phe Met Gly
145 150 155 160

Phe Lys Val Val Asp Glu Asp Ala Leu Arg Gln Leu Glu Arg Asp Leu
165 170 175

Met Ala Tyr Gly Cys Ala Val Glu Gln Leu Pro Ala Gly Glu Leu Asn
180 185 190

Ser Cys Gly Arg Arg Val Arg Ser Arg Pro Ser Gly His His Phe Glu
195 200 205

Leu Tyr Ala Asp Lys Glu Tyr Thr Gly Lys Trp Gly Leu Asn Asp Val
210 215 220

Asn Pro Glu Ala Trp Pro Arg Asp Leu Lys Gly Met Ala Ala Val Arg
225 230 235 240

Phe Asp His Ala Leu Met Tyr Gly Asp Glu Leu Pro Ala Thr Tyr Asp
245 250 255

Leu Phe Thr Lys Val Leu Gly Phe Tyr Leu Ala Glu Gln Val Leu Asp
260 265 270

Glu Asn Gly Thr Arg Val Ala Gln Phe Leu Ser Leu Ser Thr Lys Ala
275 280 285

His Asp Val Ala Phe Ile His His Pro Glu Lys Gly Arg Leu His His
290 295 300

Val Ser Phe His Leu Glu Thr Trp Glu Asp Leu Leu Arg Ala Ala Asp
305 310 315 320

Leu Ile Ser Met Thr Asp Thr Ser Ile Asp Ile Gly Pro Thr Arg His
325 330 335

Gly Leu Thr His Gly Lys Thr Ile Tyr Phe Phe Asp Pro Ser Gly Asn
340 345 350

Arg Asn Glu Val Phe Cys Gly Gly Asp Tyr Asn Tyr Pro Asp His Lys
355 360 365

Pro Val Thr Trp Thr Thr Asp Gln Leu Gly Lys Ala Phe Phe Tyr His
370 375 380

Asp Arg Ile Leu Asn Glu Arg Phe Met Thr Val Leu Thr Ile Thr Met
385 390 395 400

Arg Glu Leu Thr Pro Ala Ala Val Thr Gly Thr Leu Thr Thr Pro Val
405 410 415

Gly Arg Leu Arg Lys Leu Asn Met Gly Pro Glu Phe Leu Ser Ala Phe
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Met Leu Arg Gln Leu Ala
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<213> Salmonella typhimurium

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Ser Leu Gln Glu Lys Asn Ala Met Lys Asn Val Gly Phe Ile Gly Trp
20 25 30

Arg Gly Met Val Gly Ser Val Leu Met Gln Arg Met Val Glu Glu Arg
35 40 45

Asp Phe Asp Ala Ile Arg Pro Val Phe Phe Ser Thr Ser Gln Phe Gly
50 55 60

Gln Ala Ala Pro Thr Phe Gly Asp Thr Ser Thr Gly Thr Leu Gln Asp
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Ala Phe Asp Leu Asp Ala Leu Lys Ala Leu Asp
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<211> 306
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<213> Pseudomonas putida

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20 25 30

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35 40 45

Glu Val Asp Lys Phe Ser Leu Val Leu Arg Glu Ala Asp Glu Pro Gly
50 55 60

Met Asp Phe Met Gly Phe Lys Val Val Asp Glu Asp Ala Leu Arg Gln
65 70 75 80

Leu Glu Arg Asp Leu Met Ala Tyr Gly Cys Ala Val Glu Gln Leu Pro
85 90 95

Ala Gly Glu Leu Asn Ser Cys Gly Arg Arg Val Arg Ser Arg Pro Ser
100 105 110

Gly His His Phe Glu Leu Tyr Ala Asp Lys Glu Tyr Thr Gly Lys Trp
115 120 125

Gly Leu Asn Asp Val Asn Pro Glu Ala Trp Pro Arg Asp Leu Lys Gly
130 135 140

Met Ala Ala Val Arg Phe Asp His Ala Leu Met Tyr Gly Asp Glu Leu
145 150 155 160

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Pro Ala Thr Tyr Asp Leu Phe Thr Lys Val Leu Gly Phe Tyr Leu Ala
                165                 170                 175

Glu Gln Val Leu Asp Glu Asn Gly Thr Arg Val Ala Gln Phe Leu Ser
            180                 185                 190

Leu Ser Thr Lys Ala His Asp Val Ala Phe Ile His His Pro Glu Lys
        195                 200                 205

Gly Arg Leu His His Val Ser Phe His Leu Glu Thr Trp Glu Asp Leu
    210                 215                 220

Leu Arg Ala Ala Asp Leu Ile Ser Met Thr Asp Thr Ser Ile Asp Ile
225                 230                 235                 240

Gly Pro Thr Arg His Gly Leu Thr His Gly Lys Thr Ile Tyr Phe Phe
                245                 250                 255

Asp Pro Ser Gly Asn Arg Asn Glu Val Phe Cys Gly Gly Asp Tyr Asn
            260                 265                 270

Tyr Pro Asp His Lys Pro Val Thr Trp Thr Thr Asp Gln Leu Gly Lys
        275                 280                 285

Ala Phe Phe Tyr His Asp Arg Ile Leu Asn Glu Arg Phe Met Thr Val
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Leu Thr
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<212> DNA
<213> Salmonella typhimurium

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<212> DNA
<213> Escherichia coli

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acctgcagcc aagctcccaa gctt 144